

### **In the Claims**

Claim 1 (currently amended): A deposition apparatus configured to deposit material over a substantially circular semiconductor wafer substrate, the substrate being defined to comprise a plurality of annular regions extending radially inwardly of one another, the apparatus comprising:

a substrate susceptor for receiving the semiconductor wafer substrate; the substrate susceptor being configured to spin while the substrate is received therein and to thereby spin the substrate;

one or more heating sources for providing thermal energy to the substrate while it is spinning;

a radiation detector;

a plurality of rotating radiation conduits extending through the susceptor to proximate the substrate and configured to channel radiation from the annular regions of the spinning substrate to a plurality of stationary radiation conduits; the stationary radiation conduits being configured to channel the radiation to the detector; the detector being configured to receive the radiation from the stationary radiation conduits and output data signals in response to the radiation, the data signals being associated with the annular regions of the spinning substrate; at least one of the rotating radiation conduits being associated with each of the annular regions, a plurality of outer rotating radiation conduits being associated with an outer of the annular regions;

the plurality of outer rotating radiation conduits being configured to channel channeling radiation to a single only one of the stationary radiation conduits; and

a signal processor in data communication with the detector and configured to process data signals from the detector; the signal processor being utilized to estimate temperatures of each of the annular regions as the substrate is spinning.

Claims 2-9 (canceled).

Claim 10 (previously presented): The apparatus of claim 1 wherein the radiation is infrared radiation, and wherein the rotating radiation conduits are fibers.

Claims 11-49 (canceled).

Claim 50 (currently amended): The apparatus of claim 10 wherein the rotating radiation conduits are within a shaft, wherein the stationary radiation conduits are within a receptor, and further comprising a coupling between the shaft and receptor that enables vacuum to be maintained within the shaft while the substrate is spinning.